95-142-18

# CANYON CREEK SPAWNING GRAVEL ADDITION
1995

## A. INTRODUCTION

Funding from the Klamath River Task Force was utilized in September 1995 to add spawning gravel to lower Canyon Creek. Twelve sites were selected for gravel addition of twelve yards spawning gravel. The project was implemented from September 14 - 26.

## B. METHODS

### Site Mapping

A free hand map was drawn of areas of existing gravels and their current location. Locations of gravel addition were determined by lower gradient sites containing concentrations of rock representing spawning gravel size (.5"- 2.5"). Sites were determined during low flow period to prevent gravels from dewatering associated redds and for best view of the stream's configuration.

## C. PROJECT MONITORING

The selected sites were monitored before and after gravel addition as follows:

### Pebble Counts

Substrate size was tallied using pebble counts (pg.16,17., Draft R5 SCI Protocols Version 3.0 6/25/95). Approximately 30 pebbles were randomly selected at each site and classed on the measurement of the B-axis or secondary axis. The tally chart is shown in Figure 1.

### Percent Fines

Fines were measured using a S.C.I. fines grid to quantify the percent of fine sediment in pool tail substrate (pg. 27., Draft R5 SCI Protocols Version 3.0 6/26/95). At each pool tail three random tosses occurred. The grid is a twelve inch frame with seven cross wire strings forming 49 intersections. Points were tallied where lines intersected and fines were present (fines being defined as 2mm or less).

### Gravel Profile

Each selected gravel location was measured in relation to a permanent point.
We used a cold chisel and hammer to chisel one or two permanent marks, X and Y respectively, onto large "permanent" boulders. Two additional marks, Dx (downstream x) and Ux (upstream x) were inscribed to establish points which would define a line that transects the gravel. The distance between benchmark locations was measured (tenths of feet). The elevation of the marks was determined using a Zeiss Automatic level surveying instrument.

We strung a taught measuring tape from zero at Downstream x (Dx) upstream to Upstream x (Ux). The area on the river right side of the tape was considered negative distance to the center line tape. The area on the river left side of the tape was considered positive distance away from the center line tape.

We built a frame that supported a ten foot measuring pole (pvc pipe) with increments in tenths of feet. The frame could hold the measuring pole every .5 ft and was 4 ft. in length. See frame drawing.

We placed the frame parallel to the measuring tape so the measuring pole is perpendicular to the center line tape. Used a plum bob to line up the nearest foot mark on the measuring pole with the center line tape.

We caculated the distance from Downstream x (Dx) to the first cross section named A to establish the starting point and elevation measurements of the existing gravel.

At the first cross section A measurements were taken on 2 foot intervals with a stadia rod. Measurements were not taken if obstructions or the location was deemed unnecessary for long term monitoring purposes. The distance away from the center line, the actual total distance, the elevation and substrate composition were taken and recorded at two foot intervals along the transects of A,B,C,D,E,F...etc.

Surveying and Gravel Addition Crews.

A three person crew was utilized to survey gravel sites "pre" and "post" gravel addition. Brad Rafeedy, Darin Clark, Christy Johnson, Jim Kilgore and Andrew Eller constitiuted the survey crew. A five to seven person crew was utilized to add gravel - by hand. Steve Moore, Gary Gausen, Dave Burgess, Brad Rafeedy, Darin Clark, Christy Johnson and Andrew Eller constituted the gravel addition crew.

Slide Photographs

Pictures were taken of the pre-gravel addition sites and the post gravel addition sites. Photographs included the number of the site.

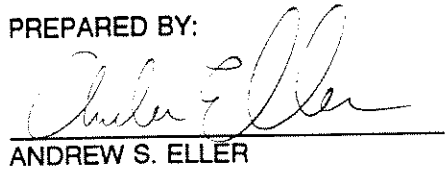
D. GRAVEL ADDITION

12 yards of gravel was stockpiled along the County Road. Trails were cleared from the gravel pile to the banks of the creek. From the main gravel piles a six-wheel ATV delivered gravel to the banks of the individual sites. From there buckets were filled and hand carried to the individual sites in the river. A five to seven person crew was used to move rock.

E. SPAWNING SURVEYS

During the fall of 1995 two surveys of the lower reaches of Canyon Creek saw one live Chinook, but no activity on the gravel sites. The project sites will be examined again for spawning activity in the spring of 1996.

PREPARED BY:



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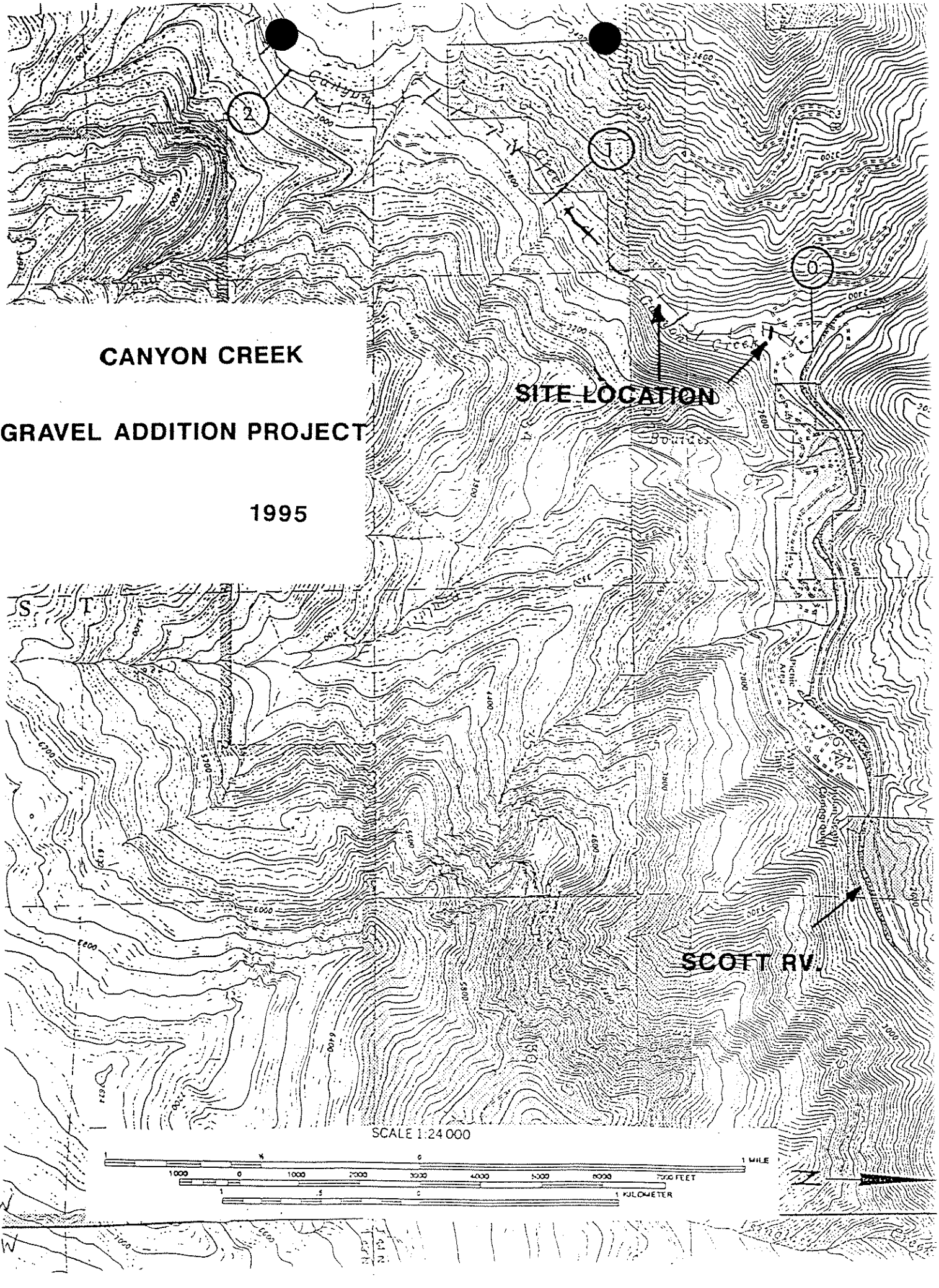
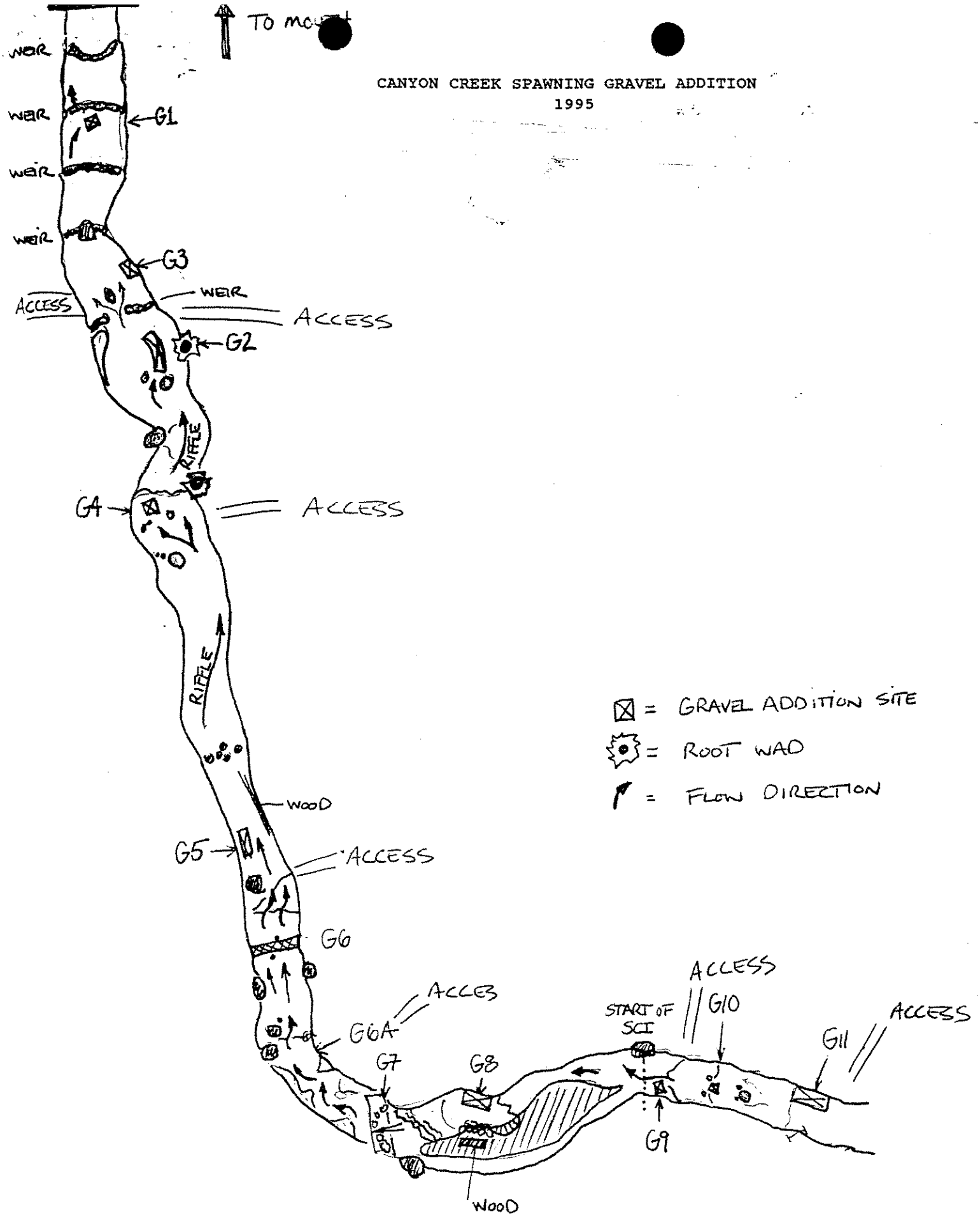
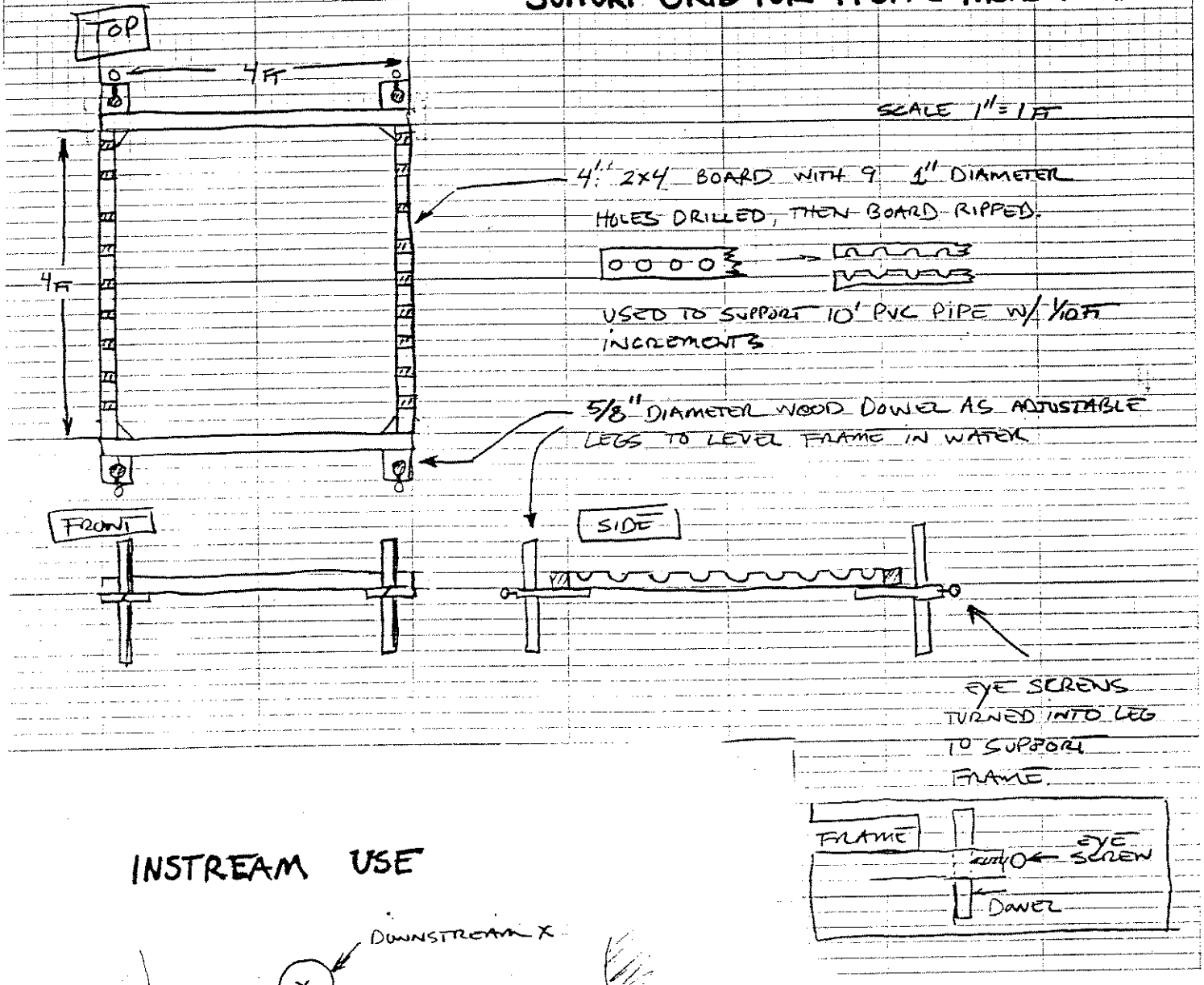

CANYON CREEK
GRAVEL ADDITION PROJECT
1995
SITE LOCATION
SCOTT RV.
S
T
SCALE 1:24 000
1 MILE
1000 FEET
1 KILOMETER
11W
10W

# CANYON CREEK SPAWNING GRAVEL ADDITION
1995



# SUPPORT GRID FOR PROFILE MEASUREMENTS




## INSTREAM USE

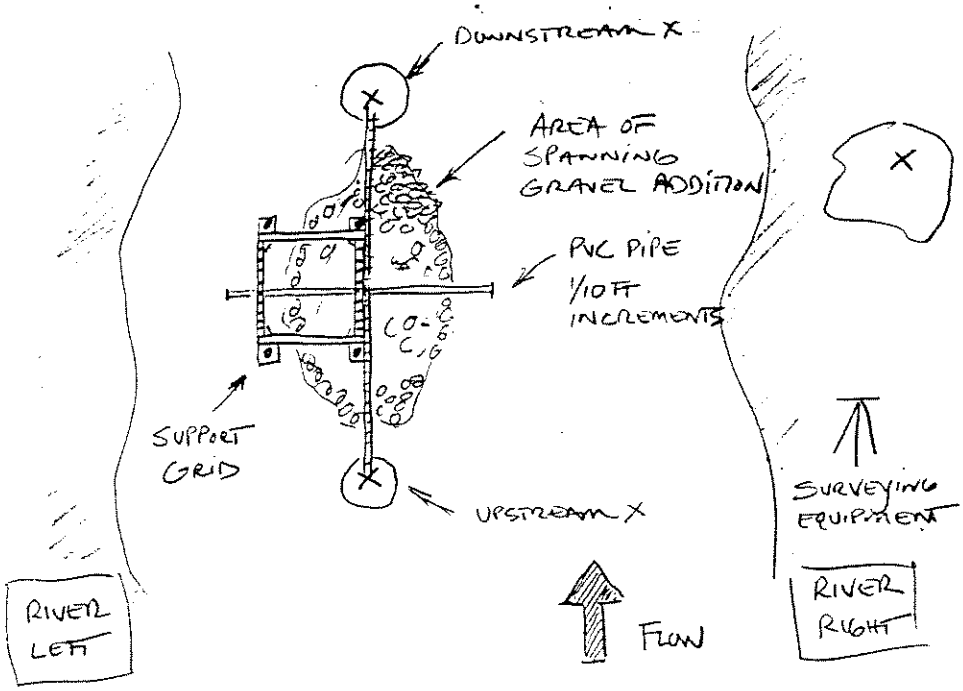



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FIGURE 1

# Stream Condition Inventory-Field Intensive
## Pass 1 Sensitive Reach "LWD/Pebble Counts"

Page ____ of ____
Sensitive Reach I.D. # ____

Stream: _____ Channel Type: _____
Forest: _____ Weather: _____
Date: _____ Crew: _____
Directions to reach start: _____

Start Time and Temp: _____ Finish Time and Temp: _____

Cross Section Candidate Sites (Circle 3 Randomly Selected Sites)

| Site # | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Distance | | | | | | | | | | | | | | | | |

Bankfull Width: _____ Min. Debris Length (=1/2 bankfull width): _____

Woody Debris Tally (Dead and Downed Wood)

| Length | Diameter Class (m) | | | | |
|---|---|---|---|---|---|
| Class (m) | 0.1 to 0.2 | 0.2 to 0.4 | 0.4 to 0.8 | 0.8 to 1.6 | > 1.6 |
| <1 | | | | | |
| 1 to 2 | | | | | |
| 2 to 4 | | | | | |
| 4 to 8 | | | | | |
| 8 to 16 | | | | | |
| 16 to 32 | | | | | |
| >32 | | | | | |

SAMPLE

Aggregate Tally: _____

Pebble Count Tally (Secondary Axis in mm)

| Sands | Gravels | | | | | Cobbles | | Boulders | Bedrock |
|---|---|---|---|---|---|---|---|---|---|
| <2 | 2 to 4 | 4 to 8 | 8 to 16 | 16 to 32 | 32 to 64 | 64 to 128 | 128 to 256 | >256 | |
| Class 1 | Class 2 | Class 3 | Class 4 | Class 5 | Class 6 | Class 7 | Class 8 | Class 9 | Class 10 |
| | | | | | | | | | |

Identification of Survey Segment

A Sensitive Reach Length (m) _____
B Sensitive Reach minus 1000m _____
C Random # between 1 and B _____
D Survey Segment Lies between C (Survey Segment Start) _____ and 1000+C (Survey Segment End) _____

Comments: